

# System for Duplicating Keys

Cross Reference to related Application (none)

Statement Regarding Fed Sponsored R & D (none)

## Background of the Invention

Most all automobile locks in these days contain 5 or more wafers or otherwise known as tumblers. These wafers are of different tolerances or dimensions depending on the depth of that cut. The dimensions are determined by inserting a reader bar into a passenger door lock all the way in until the bar stops which is the first wafer encountered. At that point a 5/16" slot is cut at the tip of the key. When the reader bar is pulled back outward in the door lock, the wafer is forced into the slot due to spring tension behind the wafer. Once the wafer is trapped in the slot, the reader bar is slid outwardly. The reader bar has a 48 degree angle at the tip of the reader bar and once reinserted, the reader bar will touch the inside thickness of the wafer. Scribed indicators (or otherwise identified) on the reader bar will align with the proper align marks (5 or more). One of the depth of the five depths will line up. Thereafter, the reader bar is pushed inwardly and the angled tip of the reader bar will force the wafer out of its slot. The key is pulled slightly outwardly to thereby trap the next wafer and read that wafer and so on until all of the wafers have been read. Thereafter, the predetermined cuts are performed on a code machine.

The above operation are known as the prior art and the inventive concept will make an improvement over what has been shown above.

## Brief Summary of the Invention

The known prior art devices have a disadvantage in that they appear to have a length of about 6". Also the reader bars, when not in use, may remain in the basic key assembly but they also have a tendency to slide out of the basic key assembly

and end up lost or mixed up with other items in a tool box. However, if found again, there is no way of knowing from which key assembly the reader bars came from. Therefore, the invention is directed to locking the reader bar in a certain position, limit the reader bar to a certain length and to color code the bar with the same color as the basic reader key.

### **Brief Description of the Drawings**

Fig. 1 is an illustration of the duplicating key of the present invention;

Fig. 2 is a view of the line-up of the wafers;

Fig. 3 is an exploded view of the present invention;

Fig. 4 is an illustration of a key reader card for a specified vehicle;

### **Detailed Description of the Invention**

Fig. 1 illustrates the key reader or blank 1 that includes the reader bar 2 which is movable in and out of the basic key reader. The reader bar 2 has a forward end 3 which is slanted backward at a 48 degree angle. at the tip of the key reader there is a slot having a depth of .045" and a width of 3/16". The reader bar 2 has an alignment mark 5 for the purpose to be explained below. The key reader has spacing marks 7a - 7d located along the forward end to indicate the spacing of the wafers located within the key reader 2. The reader bar has marks 8a - 8e to indicate where a depth reading takes place. The knob 7 at the outer end of the reader bar 2 is color coded to coincide with color coding of the key reader. In this way, it can always be determined which reader 2 belongs to or is associated with which key reader, which has not been able to be done here to fore.

Fig. 2 illustrates the depths cut 12a - 12e of the wafers 10a - 10e to be made depending on the readings of the reader bar. 13 indicates the reading at the tip of the reader bar 2 when it touches of the wafer. The reading will indicate the thickness or the depth of that particular cut to be made.

Fig. 3 is an exploded view of the key reader or the blank including the reader bar shown at 2 also as shown in Figs. 1 and 2. Also shown is a wafer 10 in a position with the key just having passed through. The reader bar 2 may be passed or may slide through the key reader 1 until it touches the wafer 10 and then a reading may be taken at the point 5. At 16 there is shown a depth graph chart . There is a cover 19 that will cover the head of the key reader 1 but leave an opening 19a. The opening is important because the key reader 2a will visibly pass through the opening 19a. The reader bar has bend 2a induced therein. This bend, when pushed into the opening 19 a will self-lock itself therein so that it cannot fall out of the opening. this feature represent a locking feature so that the reader bar 2 cannot accidentally get lost. It must be pulled out of the key reader by force. The reader key should be made out of tempered spring steel. Fig. 3 shows the knob 15 to be attached to the end of the reader bar 2. It helps to move the reader bar 2 within the key reader 1 but most importantly, the knob 15 is color coded to match the color coding on the key reader head 1. This way, if the bar reader 2 should be misplaced from the key reader, they can easily and visually be reunited with each other by way of the color. The cover 13 is fastened to the head of the key reader by way of rivets 17 passing through the holes 18 of the cover.

The colors of each of the key readers and associated bar readers are assigned to identification charts which in turn are assigned to different makes of vehicles.

Fig. 4, for example, shows such an identification or specification chart which in the instances is assigned to the Ford Escort and other vehicles having similar

cylindrical locks such as a Mercury Tracer.

In each instance, for example, the color 'yellow' is assigned to these particular vehicles. It stands to reason that other makes and models receive a different color coding.

Fig. 4 shows such an identification and specification chart. The makes and models are clearly shown and the simulated key 1 having the reader bar 2 is shown in a color and so is the square 28 should receive the same color. The years of the makes of the vehicle is also shown at 27 so that no mistake can be made in identifying the specifics of the cars involved. The specifics of the readings can be entered on the numbers that indicate spaces or depth. The specification of these readings for a particular vehicle appear in the chart in the upper left hand corner.

**What I claim is:**